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Title: INTRODUCTION AND TABLE OF CONTENTS OF WORKS OF THE MATHEMATICAL
INSTITUTE IMNIT V. A. STEKLOV! (VOLUMES 31, 32, 33 OF 1950)
(USSR) (Editor Academician I. G. Petrovskiy)

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CONFIDENTIAL**INTRODUCTION AND TABLE OF CONTENTS OF WORKS OF THE MATHEMATICAL****INSTITUTE IMENI V. A. STREL'KOVI (VOLUMES 31, 32, 35 of 1950)**

Editor Academician I. G. Petrovskiy

These works were published, 1950 by the Press of the Academy of Sciences
of the USSR, in Moscow and Leningrad; the editors were Academician I. G. Petrovskiy
and Professor S. N. Mikhalkov.

Below are given the introductions and tables of contents of subject
three volumes:

subject three volumes are devoted to the following topics:

- Vol 31. "Compact Topological Spaces," by J. S. Aleksandrov and P. S. Uryson.
- Vol 32. "The Convergence with Respect to Measure of Trigonometrical Series,"
by D. Ya. Men'shov.
- Vol 35. "The Curvilinear and Double Integral," by G. F. Tolstev.

1. Vol 31 (94 pp). The present contains an exposition of the results on
the theory of compact and bicompact topological spaces, obtained by
P. S. Uryson and J. S. Aleksandrov in the summer of 1922 and reported
to the Moscow Mathematical Society in the 8 June and 17 October, 1922,
sessions. Preparations for printing of the first edition was concluded
3 February 1923. The work was finally published in 1929, which a short
exposition of the results contained in it had been published in the
Bulletin Academie Polonaise, Classe des Sc. Math et Nat, serie A, 1923,
and in *Math Annalen* 92 (1924) and 94 (1925).

- Chapter 1. Basic Definitions and General Theorems
- 2. Structure and Power of Biconnect Spaces
- 3. Absolute Closed Spaces
- 4. Locally Compact Spaces
- 5. Metrization of Compact and Locally Compact Spaces. Supplementary
Remark on a Property of Transfinite Numbers

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2. Vol 32 (97 pp). The results contained in this work were published without proof in Doklady Akademii Nauk SSSR, Novaya Seriya, Volume 59, Number 5, pp 849 (1946).

Chapter I. Introduction

2. properties of the limits of indeterminateness with respect to measure
3. Interrelation between a) the limits of indeterminateness in measure and b) ordinary limits of indeterminateness
4. Certain properties of trigonometrical polynomials
5. Proof of the basic lemma on the limits of indeterminateness in measure of trigonometric series
6. Proof of two theorems on limits of indeterminateness in measure of trigonometric series

3. Vol 35 (101 pp). Inspite of the strength of the Lebesgue theory of integration, which has exerted great influence on the numerous branches of present-day mathematical analysis, even this theory is not without its essential deficiencies. The main deficiency consists in the following fact: only that function f turns out to be integrable (or summable in Lebesgue's terminology) for which $|f|$ also is integrable. In other words, in the Lebesgue theory one considers only the absolutely integrable functions. The classical problem of great importance - the problem of finding the primitives, in this theory does not obtain its complete solution.

The present work emphasizes the following problems: first, study of the properties of curvilinear and double integrals on the basis of the theory of Denjoy - Luzin - Khinchin; second, study of the complete differentials with applications to analytical functions (conditions of Cauchy - Riemann, generalized theorems of Mares).

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Chapter 1. Introduction

2. Substitution of Variables in the Denjoy-Kinchin integral
3. Curvilinear Coordinates: Search of a function with respect to its partial derivatives given along an arc.
4. Complete differential Cauchy - Riemann Conditions
5. Properties of the Double Integral with Variable Limits
6. Second Composite Derivative not summable in any region
7. Sufficient Condition for Double Integrability in a Rectangular Region/
8. Sufficient Conditions for Double Integrability in Region with Curvilinear Contours
9. Sufficient Condition for Double Integrability in regions with Curvilinear Contours the Case of the Bounded First

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